Identity in eHealth - from the reality of physical identification to digital identification

Abstract

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Many heterogeneous and highly specialized software applications for eHealth have been implemented and deployed by diverse health organizations, such as public and private hospitals and health care centers. The rational management of these eHealth assets together with their efficient and interoperable integration represents today a major hitherto unresolved challenge for the health sector at a global level. One of the present implications is the serious interoperability issues that arise by the lack of widely accepted standards for the homogeneous integration of the diverse identity and authentication mechanisms used by the eHealth applications ecosystem. Unfortunately this has not yet been a major infrastructure concern for the eHealth context and thus constitutes a major road block for the realization of these applications full integration potential.

It is a common occurrence that only at the time when an application is put into production there is an awareness about the sudden difficulty of integrating and reconciling the new application identity management and users profiles with what has already been done for the rest of the applications currently in production at the site. This situation is aggravated when the application leaves the local domain to be deployed at the regional or even national level, where, without a well-planned digital identification infrastructure, the applications integration difficulties can be orders of magnitude more severe.

In this work we propose a new high level model for the secure identity provisioning of eHealth applications. The critical infrastructure standard components required for such an infrastructure, together with the Portuguese eID smart-card, allow us to delineate a novel and highly flexible infrastructure for secure identity management and authentication services for eHealth.

The secure privacy oriented identity infrastructure we propose fits well within the specific needs of highly diverse eHealth applications, precisely because it provides a strong foundation, upon which more reliable, secure, trustworthy and real interoperable eHealth applications can be built and deployed.